

WHAT IS CLAIMED IS:

1. An optic fiber connection system which includes first and second mateable connectors that each have a housing, each housing having at least one body passage extending in front and rear longitudinal directions and at least one of a pair of mateable optic fiber terminus assemblies, with at least a first one of said terminus assemblies including a terminus and a terminus spring that biases the terminus toward the mating terminus assembly, wherein:

the housing of said first connector includes a first frame and a first body slideable in longitudinal directions in said first frame;

10 extension means coupled to said second connector and to said first body for allowing said second connector to stop forward movement of said first body when said pair of mateable optic fiber termini are mated while allowing said first frame to continue moving forward, including a body spring that urges said first frame rearward following its continued forward movement after said first body has stopped forward movement.

15 2. The connection system described in claim 1 wherein:

said extension means includes a backup with a largely forwardly-facing surface that abuts said first connector body to limit rearward movement of said first body with respect to said first frame, a release that is slideably mounted in said frame and that has a largely forwardly-facing surface that abuts said backup to limit rearwardly sliding of said backup with respect to said release member, and a body spring that biases said release forwardly while allowing it to move rearwardly against biasing of said body spring;

10 said extension means also includes a standoff mounted on said second connector, that is positioned to engage said release and prevent it and said first body from moving further forward relative to said second connector, whereby to stop said backup and first body from moving further forward with said first frame after

said pair of optic fiber terminii assemblies are fully mated.

3. The connection system described in claim 2 wherein:

said backup lies rearward of said first connector body, said frame has a longitudinally-extending bore with a rear end forming a bore rear shoulder, said release member comprises a rod device with a rod that lies partially in said bore and that is longitudinally slideable therein, and said body spring lies in said bore around  
5 said rod device;

said rod has a front end forming a shoulder that abuts a front end of said second spring, said body spring having a rear end that abuts said bore rear shoulder, and said rod has a rear end that passes rearwardly through said body spring rear end and said rod device has a largely forwardly-facing shoulder that abuts said backup.  
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4. The connection system described in claim 2 including a terminus alignment sleeve, said first of said terminus assemblies initially lying in said alignment sleeve in an initial position, and said first terminus assembly is slideable rearwardly from said initial position to a rearward terminus position after the tips of  
5 the two mating terminii are engaged and said tips move rearward relative to said first body, and a daughter board on which said first connector is mounted and a mother board on which said second connector is mounted, said mother board being fixed in position on a support wherein said support has a guideway that guides said daughter board in sliding toward said mother board until said daughter board is latched in a fully installed position, wherein:  
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said second connector housing has a standoff that first abuts said rod front end when said connectors are close enough together that said terminus tips are engaged with each other and said first terminus has slid rearward to said rearward first terminal position;

in a nominal position of said daughter board in its fully installed position, said standoff has engaged said rod and prevented it from moving while said first frame has continued to move forward with said daughter board to said fully installed position.

5. The connection system described in claim 2 including:

a second release device that is slideably mounted in said frame and that abuts said backup to limit its rearward sliding and a second body spring device biasing said release device forwardly relative to said first frame;

5 said extension means includes a second standoff mounted on said second connector and positioned to engage said second release device when said standoff engages said release;

10 said first frame has opposite corners, and said release and said second release device are located at said opposite corners, and said body spring and said body spring device are also located at said opposite corners.

6. An optic fiber connection system which includes first and second connectors that each has a housing with a plurality of body passages extending in front and rear longitudinal directions, and a plurality of pairs of mateable terminus assemblies lying at least partially in the passages of said housings, with one terminus assembly of each pair lying in one of said housings and the other terminus assembly of the pair lying in the other housing and the pair mating by tips of the pairs of terminii abutting each other, at least a first terminus assembly of each mateable pair of terminus assemblies having a terminus spring that urges the terminus of the first terminus assembly towards the mating terminus while allowing the first terminus to be moved rearward by the mating terminus so the pairs of terminii reach fully mated positions, wherein:

10 a first of said housings includes a first frame and a first body that is slideable rearwardly from an initial position to a rearward position with respect to said first

frame;

a body spring apparatus that urges said first body forwardly with respect to said first frame toward said initial position when said frame has continued to move forward but said body has not, whereby to allow the first frame to move forwardly even after said pairs of terminus assemblies have reached their fully mated positions.

7. The connection system described in claim 6 wherein:

said first body has a largely rearwardly-facing shoulder and said first connector includes a backup with a shoulder that lies directly rearward of said first body shoulder;

5 a release that abuts said backup to prevent its rearward movement, said body spring urging said release forwardly with respect to said first frame;

said second connector has a standoff that is positioned to press said release rearwardly relative to said body, to allow said first body to not move forward while said first frame moves forward after each pair of said terminus assemblies have mated.

8. The connection system described in claim 6 wherein:

when all of said passages contain terminus assemblies and said connectors are fully mated, the total force applied by said springs to said first body urging it rearwardly is a predetermined value;

5 the total force applied by said body spring apparatus urging said backup member forwardly against said first body is greater than said predetermined value, whereby to assure that said terminii are all fully mated before said first body can move rearward with respect to said first frame.

9. The connection system described in claim 6 wherein:

said first and second frames are mounted respectively on a daughter board

and a mother board, said mother board being mounted at a fixed position on a support and said daughter board being slideable forwardly on a guide of said support toward said mother board to mate said first connector with said second connector, said support having a latch that latches to said daughter board to prevent rearward movement of said daughter board after said daughter board has reached a predetermined fully installed daughter board position;

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    said first and second connectors have engaging parts that engage and prevent said first body from sliding forward relative to said second connector while said first frame and daughter board slide forward until said daughter board is latched by said latch.

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10.     The connection system described in claim 6 wherein:

        said first frame has opposite sides on opposite sides of said body;

        said body spring apparatus comprises a pair of body springs lying in said opposite sides of said body.

5         11.    An optic fiber connection system which includes first and second connector assemblies that each has a housing with a plurality of terminus-receiving passages extending in front and rear longitudinal directions, said first and second frames surrounding the respective first and second bodies, said second housing being mounted on a mother board, said first housing having a first frame mounted at a fixed position on a daughter board and having a first body that lies in said first frame, said mother board lying at a fixed position on a support and said daughter board being slideable forwardly on a guide of said support toward said mother board to mate said first connector with said second connector, said support having a latch that latches to said daughter board to prevent rearward movement of said daughter board after said daughter board has reached a predetermined fully installed daughter board position, said first and second connectors respectively having first and second terminus assemblies each lying in one of its passages to mate with

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another of said terminus assemblies, at least one of said terminus assemblies including a terminus and a spring that urges the terminus towards the mating terminus assembly, wherein:

    said first body is longitudinally slideable in said first frame; and including

5       a body spring coupled to said first frame and said first body and urging said first body to move forwardly with said frame while allowing said first body to not move forward with said frame;

    engaging parts on said first and second connectors that engage and prevent said first body from sliding forward beyond a predetermined position while said daughter board and first frame continue to slide forward until said daughter board is latched by said latch.